

REMARKS

In lieu of the claims presented in the continuation application, filed on June 26, 2003, please enter the claims attached hereto. Favorable consideration of the claims as presented herein is respectfully requested.

U.S. patent 5,819,672 to Radway et al. had been cited in the prosecution of the parent application. Pending claims 1-10 and 16 in the subject application define patentably over the Radway et al. patent. Claim 1 calls for a method for increasing efficiency of heat transfer of a furnace in which calcium-containing coal is burned. The method comprises (a) adding to the coal enough of a fluxing agent-free composition comprising an iron compound to produce treated coal that is free of added fluxing agent and contains an effective amount of the iron compound; and (b) burning the treated coal, forming calcium ferrite, thereby increasing the efficiency of the heat transfer of the furnace. This method differs from that disclosed by Radway et al.

The method of the Radway et al. patent, as described in the patent's specification, defined in the patent's claims and illustrated in the patent's working examples, is the standard prior art technique over which the present invention provides an improvement –it is the coating of furnace wall ash with a darkening agent. For example, the Radway et al. Abstract states, “The method involves exposing the walls to a darkening agent, or a combination of a darkening agent and a fluxing agent.” And, again, in the Field of the Invention, Radway et al. state that “the invention relates to a darkening agent for darkening highly reflective deposits of thin ash . . .” And, again, in the Summary of the Invention, Radway et al. state, “The method involves exposing the walls to a darkening agent, or a combination of a darkening agent and a fluxing agent.”

Although Radway et al., in passing, mention that the darkening agent alone may be used to darken the ash, the examples only teach the use of the darkening agent with a fluxing agent. The fluxing agent allows the darkening agent to adhere to the ash. By contrast, the method of the present invention does not involve exposing the furnace walls to a darkening agent and a fluxing agent. Moreover, although Applicant argued in Preliminary Remarks A that the present invention inhibits the accumulation of ash on the wall, with additional research data, Applicant has discovered that the invented fluxing agent-free composition might not reduce total ash

accumulation (although it is still believed that the amount of reflective ash is reduced), but has confirmed that, as noted in the subject specifications the composition increases the efficiency of heat transfer of the furnace. The composition appears to increased such efficiency by increasing the thermal conductivity of the ash on the furnace walls. Radway et al. further do not teach or suggest formation of calcium ferrite. The Radway et al. patent is directed consistently and single-mindedly to coating reflective ash build-up with a darkening agent and a fluxing agent.

Nor do Radway et al. provide any hint as to how to carry out its method (e.g., with respect to concentrations, type of iron ore, and techniques), let alone the claimed method. Radway et al. simply did not appreciate that if iron oxide were added to the coal in the proper amount, it would form calcium ferrite upon combustion of the coal, thereby obviating the need to coat white ash as it directs, and nothing in the Radway et al. patent so teaches or suggests. This surprising result is sufficient to establish patentability.

CONCLUSION

In view of the foregoing, favorable consideration and early allowance of claims 1-10 and 16 are earnestly solicited.

Respectfully submitted,

Thompson Coburn LLP

By:


Kenneth Solomon
Reg. No. 31427
One US Bank Plaza
St. Louis, MO 63101
(314) 552-6297